THE AMERICAN
JOURNAL OF PHARMACY

AUGUST, 1909

THE NATIONAL FOOD AND DRUGS ACT OF JUNE 30, 1906.*

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I feel honored that there should come to me this opportunity to address the Utah Pharmaceutical Association, not only because of a great interest in the national law which is the subject of my remarks, but because of the character and standing of this association and of the individuals who compose it. Upon the good sense, honesty, ability, and public spirit of the druggist and pharmacist, much depends in the enforcement of the law.

From the earliest recorded time the pharmacist has been a prominent figure, not only in his chosen profession, but often in the council chamber and in the arena of public affairs. The early fathers of medicine and pharmacy, Hippocrates and Dioscorides, Greeks, and Celsus, a Roman, practiced these twin arts, and were, at the same time, prominent in political affairs. As a matter of historical record, it is certain that Arcagathus, one of the richest and most influential Greeks of his day, kept a shop in Rome for the sale of drugs about one hundred and eighty-seven years before the Christian era. Galen, also, the great physician of the second century, whose influence is felt in medicine to-day and whose name survives in the familiar pharmaceutical preparations called

* Address delivered before the Utah Pharmaceutical Association, July 15, 1909.

galenicals, was a pharmacist and also dispensed drugs in Rome. The genuine progress made by the Arabians in pharmacy is undoubtedly due to the personal interest Mahomet himself took in the study, for which he had a special liking.

Charlemagne was a royal pharmacist, who found time, in the scant leisure of his later life, to establish a drug farm and to dabble in some of the attractive experiments of the apothecary's art.

An interesting and curious figure in the history of pharmacy is Philip of Hohenheim, called Paracelsus, who was born, if my memory serves me right, about 1490. He had practically no early education, but such was the natural force of the man that he left an impression on pharmacy and medicine that is distinct to-day. His was an uncontrollable spirit and many stories are told of his intolerance of the opinions of contemporaries and predecessors, of how, for instance, he publicly burned the works of Galen, in the public square of his native town.

Candor demands that we call attention also to those skilled in the knowledge of drugs who used their knowledge for harmful purposes. During the Middle Ages pharmacy, in some of its branches, was used as a tool by certain famous, or perhaps infamous, men to remove their powerful adversaries. Two of the Borgias, the celebrated Italian house, Cæsar and his sister, Lucretia, had considerable knowledge of poisons and of the antidotes for them, and made frequent use of their knowledge to dispose of their enemies. Equally illustrious, celebrated as patrons of art and literature, men of uncommon force of mind and character, were two members of another prominent Florentine house, the Medicis, Lorenzo the Magnificent and Cosmo the Great, Dukes of Florence. Like the Borgias, they used the apothecary's art simply as a political weapon and to make themselves immune to poison by antidotes.

You will be interested no doubt to know what steps the Secretary of Agriculture has taken to protect the drug supply of the country. Most of our drugs, in one form or another, are imported from foreign countries. The law says that no drug shall come into this country if it is adulterated or misbranded or may be dangerous to the health of the people of the United States. Accordingly samples are taken of drugs offered for entry into the United States, and if they are adulterated or are dangerous to the health of our people, their entry is not allowed and it is required that they be shipped

out of the limits of the United States. If they are merely misbranded, the importers are required to relabel them correctly. Hundreds of shipments of drugs either have been denied entry into the United States or have been relabelled before admission. Some of the worst classes of importations of drugs have ceased altogether since the law has been in effect.

To the retail druggist, this work may seem commendable but on the whole very remote from him. This is not the fact. In this examination at ports of entry by expert United States officials lies a great protection for the retail druggist. All of you pharmacists are under State pharmacy laws which hold you responsible for the purity of the drugs you sell. Theoretically you are supposed to ascertain the quality of every article that you dispense. Practically, it is possible for you to do this only in a small minority of cases. Your only safety lies in having the determination of purity made prior to the time the articles come into your hands. Before the national law was enacted you had no such protection, and you know you could not then rely upon either the genuineness or the purity and quality of the drugs used by the manufacturer. Even when the drugs were good, in many cases, the manufacture of the preparations was not so conducted as to insure reliability.

It is not meant even to intimate that this work of port inspection of crude drugs is complete. It has been begun only, and some salutary results have come already; yet, as the work is perfected, the ultimate results will far exceed those now apparent. The reasons why greater progress has not been made are many. The first step was the collection and examination of crude drugs in this country and abroad. The examination of these samples furnished a basis of information for further procedure, but it took time for this information and the instructions for guidance of the drug collectors to reach all parts of the world. This preliminary work has, however, been largely completed, and the effect of the work done is shown in the drugs being offered for entry, in which there is an unmistakable change for the better.

The pure food law has now been in operation for about two years and a half, and, while the law was passed primarily for the protection of the consumer, it is legitimate to ask in what way it has been of service to the wholesale as well as the retail druggist.

One phase of the question, and by no means the least, is a moral one. Before the Act was passed, there was no restraint on the

kind of drugs and chemicals placed on the market. Because of competition with unscrupulous dealers, the man who wished to carry on his business with clean hands was either forced to adopt the tactics of the unscrupulous or go to the wall. Those who wished to conduct business in clean fashion were in the majority, but it took only a few, who were willing and ready to adopt dishonest tactics, to create havoc in the ranks of those who wished to be honest. Just so long as there was no restraining hand, adulteration of drugs was profitable and easy, but now the Government has a powerful weapon in hand to protect the honest man conducting his business in a decent, reputable fashion. As a result, there can be no doubt that the business integrity of the honest wholesale and retail druggists is protected. If for no other reason, the law has been well worth while. The dishonest we still have with us, and it will be many years before the millennium, but the haling into court of some of these adulterators and "misbranders" is having a wholesome effect. It is of interest to know that after the passage of this law some concerns practically went out of business of their own volition. This is certainly a wholesome result, for it was not the legitimate business that thus suspended, but the business whose very existence was based on fraud.

It is unnecessary to argue pro and con, whether a high class article, with merit back of it, has, everything else being equal, a better chance in the business world than one lacking in such qualities. If there is one place where merit is appreciated it is in drugs, as the use of no other class of articles so affects the home. The physician gives his medicines with the expectation that they are of a certain potency, and he expects certain results. If the results are not obtained because the drugs used are adulterated, it may be a matter of life or death. The refinements of prescription filling, where the slightest variation from the standard worked out by learned and painstaking experimenters through many years is very objectionable, demand that the retail druggist be supplied with pure drugs and standard preparations. Nothing can more seriously threaten the health of the people than an unsafe, substandard drug supply. Under the pure food and drugs law you are able to obtain much more readily drugs of known potency. This places your business on a much more substantial basis. It increases the confidence of the practicing physician as well as of the laity in your wares, and ultimately it will lead to increased personal satisfaction

in conducting your business and to increased financial returns as well.

Every true business man likes to have real confidence in the wares in which he deals. You are no longer completely at the mercy of the manufacturers, taking what you can get, but you can more readily obtain that which you seek and what the public wants and should have. An era of more honest dealing in drugs has been entered upon, and the time is ripe for you and for us all to get the benefit of it.

The Food and Drugs Act has been of benefit to the retail druggist by making it possible for him to get goods of high grade and standard quality from almost every wholesaler with whom he deals, instead of from a small proportion of them. It has benefited the retail druggist who has always handled nothing but standard goods by forcing his competitors to raise their prices in consequence of having to carry a higher quality of goods than was necessary under former conditions. It has also benefited him by increasing his standing in the community and among those who are familiar with the provisions of the law and the fact of its enforcement.

The law has benefited the honest wholesale druggist who has always sought to comply with the standards as established by the Pharmacopœia and the various authorities. For instance, formerly if a retail pharmacist asked the price of oil of sweet almond from the wholesale druggist, he would get a certain price from the reputable jobber who handled only the pure goods and he would get a very much lower price from the jobber who was in the habit of substituting oil of peach kernel or some other similar seed and labelled oil of sweet almond. This condition of affairs is now changed so far as interstate commerce is concerned, and it is apparent that all jobbers are on the same basis.

Under the law it is forbidden to manufacture or sell in the territories or to ship in interstate commerce any misbranded or adulterated drug. Under this provision of law the Department of Agriculture has been very active, and most of you have observed, no doubt, that the labels of many proprietary articles have been toned down and no longer promise to cure all the ills of humanity. You will be interested in a brief description of some of the principal drug cases in which convictions have been had in the courts.

In August, 1907, one of the inspectors of the Department purchased a number of samples of a drug preparation extensively used

throughout a large portion of the United States. It was represented to be a cure for headache, neuralgia, and other related complaints. The preparation was manufactured in the city of Washington and was put up in bottles of various sizes, and these in turn enclosed in cartons upon which appeared the following statements: "Harper's Curforhedake Brane-Fude. Read inner circular. Guaranteed under the Food and Drugs Act, June 30, 1906. No. 6707. Each oz. contains 30 per cent. alcohol and 16 grs. acetanilid. A positive relief for headache, neuralgia, nervousness, insomnia, &c. It is taken in doses of two teaspoonfuls in a little water and repeated in 20 or 30 minutes if not relieved, and again in 30 minutes after the second dose, if that should not give the desired effect. For insomnia, two teaspoonfuls at bedtime; for nervousness, two teaspoonfuls every 2 or 3 hours." The bottles themselves were similarly labelled. Each carton contained a folded circular describing the preparation as "A most wonderful, certain and harmless relief. The rapidity by which it cures and the after effects being pleasant and without any depression whatever, containing no morphine or poisonous ingredients of any kind, is, I think, sufficient guarantee of its superior qualities." You will observe there was a direction on the carton to read the inner circular. The preparation was promptly analyzed in the Bureau of Chemistry and found to consist of 24.2 per cent. of alcohol, 15 per cent. of acetanilid, 1.5 per cent. of caffeine, 1 per cent. of antipyrin, together with varying quantities of potassium, sodium, and bromides. By comparison of this analysis with the statements on the label, the Department was of the opinion that the preparation was misbranded within that provision of Section 8 of the Act which declares that a drug is misbranded if the package or label which contains it shall bear any statement, design, or device regarding the drug or any of its ingredients or substances contained in it which shall be false or misleading in any particular. Human ingenuity has not yet been able to devise a food for the brain as contradistinguished from a food that nourishes other portions of the body, and it was quite palpable that the substances contained in this preparation were in no sense foods for the brain. The danger of advertising a drug, particularly one containing the ingredients that composed this preparation, as a food for the brain must be apparent to all of you. The idea that the brain capacity could be increased by increasing the quantity of the drug consumed was a most dangerous one to those

who might accept it. The statement that it was a brain food was, therefore, false and misleading within the statute. The further statements in the circular heretofore mentioned that the preparation was a most wonderful, certain, and harmless relief, and contained no poisonous ingredients of any kind were clearly false, because, in the opinion of the Department, the preparation did contain poisonous ingredients—one very powerful poisonous ingredient, namely, acetanilid; therefore, it could not be a harmless relief, particularly as there was nothing in the circular or on the bottle or the carton that would tend to restrain the purchaser from consuming as much of the preparation as his strength and endurance would permit him to swallow. The facts were duly reported to the Department of Justice, and in January, 1908, the United States Attorney filed an information in the Police Court of the District of Columbia against the manufacturer of this preparation; in February thereafter the defendant was put upon his trial which lasted for sixteen days, at the expiration of which the jury returned a verdict of guilty and the defendant was sentenced to pay a fine of $700.

This was the first case tried in the United States under the Food and Drugs Act. This case contains several points that will be of considerable interest to you, but I wish to direct your attention to one in particular, and that is, that if in the preparation for commerce of a drug product you accompany it with a descriptive circular in which there are false and misleading statements, you are liable under the Act, because this circular is, in the eyes of the law, just as much a part of the label as the label pasted on the bottle.

Shortly after this case was tried, the Department received information that a druggist in Washington was selling promiscuously cocaine in small bottles upon which there were no labels. You recall that provision of Section 8 of the Act which provides that a drug is misbranded if it fails to bear a statement on the label of the quantity or proportion of alcohol, cocaine, etc. Now, a casual reading of this provision of the law seems not to require that a label actually appear on the bottle or package, yet when this is necessary in order to state the quantity of alcohol, cocaine, etc., in the eyes of the law a label must be there in order to fulfil the requirements of the law that the presence of these drugs must be declared; and I may say to you that where this question has arisen in the courts there has been no dissent from the ruling that a label must be put

upon the bottle or package, and the statements required by the law as to these drugs must be there. The Department of Agriculture promptly reported the facts in this case to the Department of Justice and the defendant was duly put upon his trial, convicted, and fined $100.

One of the most amazing frauds with which the Department has had to deal was that of an alleged skin food manufactured in the State of Ohio and put upon the market in attractive guise under the name of "Sartoin Skin Food." Much to the astonishment of the Department it was found that the preparation had rather an extensive sale. The label on the outside of the tiny package containing the so-called "skin food" bore this statement: "Sartoin Skin Food. Formula: 2 oz. rose water, 4 oz. sartoin, 1 oz. cologne spirits, 16 oz. hot water. Properties—produces a soft, velvety tint on the roughest of skins and is remarkably effective in the treatment of pimples, blackheads, rash, blemishes, and sunburn and chapped skin. Also highly beneficial for men's toilet after shaving; relieves all soreness and smarting." A circular enclosed inside of the package declared that the preparation was probably the most effective remedy known to science for all skin blemishes and would produce normal growth of all parts not fully developed or which were shrunken. The analysis of the Department disclosed that the preparation consisted of epsom salts colored with a pink dye. Of course the Department promptly reported the case for prosecution for the false and misleading statements on the label and in the circular. The defendant as promptly plead guilty.

In line with "Sartoin Skin Food" was another preparation manufactured in Baltimore, Maryland, and labelled and sold as "Hancock's Liquid Sulphur." On the label of this preparation it was claimed that it was "Nature's greatest germicide. Permanently cures the most stubborn cases of blood and skin disorder. An absolute disinfectant. Purifies the blood by absorption, and removes all unhealthy secretions from the body. A perfect sulphur spring in the retirement of your home. The great cure for eczema, acne, itch, herpes, ringworm, pimples, prickly heat, diphtheria, catarrh, canker, sore mouth and throat, granulated eyelids, ulcerated conditions, cuts, burns, and scalds. All diseases of the scalp." The Department obtained samples of this preparation from a dealer in the city of Washington and promptly submitted them to analysis, which developed that the article was nothing more than an aqueous

solution of commercial calcium sulphide. Of course the preparation was not a liquid sulphur, since sulphur will not remain in solution a sufficient time to make it a commercial commodity, and was certainly not "Nature's greatest germicide," nor a great or any cure for diphtheria. Information was duly filed against the manufacturer, and upon his plea of guilty the court fined him $100.

Another preparation formerly manufactured in Ohio was "Concentrated Oil of Pine Compound." Samples were obtained by the Department and analyzed and it was found that the preparation was a mixture of fixed oil, a resinous substance, and a small amount of volatile oil obtained by steam distillation resembling turpentine. This analysis plainly showed that the article could not truthfully be called a "Concentrated Oil of Pine Compound," and it was therefore misbranded. The members of the firm of manufacturers were duly prosecuted and convicted upon their plea of guilty and were sentenced to pay fines and the costs of the court.

Samples of a preparation labelled "Blackburn's Cascara, Wild Lemon, Castor Oil Pills, Compound" were obtained by the Department in Michigan in January, 1908, and analyzed. The analysis showed that the preparation consisted of calcium sulphide, capsicum, atropine (introduced, probably, in the form of belladonna extract), and a mere trace, if any, of castor oil. The label was, therefore, false, deceptive, and misleading because the preparation purported to be castor oil pills, when, in fact, it did not contain a medicinal dose of castor oil, if, indeed, there was any present at all. The manufacturer in Ohio was prosecuted, convicted, and sentenced to pay a fine.

In October of last year, one of the collaborating agents of the Department discovered in a drug store in Topeka, Kansas, forty-one boxes of a preparation labelled "Muco-Solvent cures croup, whooping-cough, diphtheria, all throat troubles, and catarrhal disorders." It was apparent that the statement in this label that it would cure diphtheria and the other diseases mentioned was false, misleading, and deceptive. The goods were seized and confiscated.

In June, 1908, an inspector of the Department of Agriculture found in the possession of one of the department stores in the city of Washington eighty-five dozen packages of preparations labelled "Mme. Yale's Excelsior Fruitcura," "Mme. Yale's Fertilizer Tablets," "Mme. Yale's Excelsior Hair Tonic, "Mme. Yale's Excelsior Complexion Bleach," "Mme. Yale's Antiseptic," "Mme.

Yale's Blush of Youth," and "Mme. Yale's Skin Food." For the skin food it was claimed on the package that it was the only genuine skin food in the world; that it was absolutely guaranteed to remove wrinkles and every trace of age from the face; that it was soothing in its effect on the skin, healing as a magic balm, and fattening in its qualities. The Department's analysis showed that it consisted of 76.5 per cent. of vaseline, mixed with fixed oil or fat and zinc oxide, colored with a pink dye, and perfumed. For the Fruitcura it was claimed on the package that it was a cure for every ill to which a woman was sexually heir from infancy to old age; that it was a specific for the generative organs and an elixir of life; and that it would cure all so-called incurable diseases of women. The analysis of this preparation showed that it consisted of 76.97 per cent. of volatile matter (largely water with 16.66 per cent. of alcohol), 29.71 per cent. of sugar, and small quantities of plant drugs. For the Fertilizer Tablets it was claimed on the package that they were a specific for curing flatulency and all gastric troubles and obesity. The analysis of this preparation showed that it was composed largely of charcoal, compounded with potassium bitartrate and sugar. For the Hair Tonic it was claimed on the package that it would stop the falling of the hair, would cure and prevent dandruff and all scalp diseases, and would overcome any hereditary tendency to baldness or grayness. The analysis of this preparation showed that it consisted of 15.56 per cent. of alcohol, 82 per cent. of water, and small amounts of glycerin, perfumed with bergamot oil. For the Complexion Bleach it was claimed on the packages that it would remove moth patches and all skin discoloration and create natural beauty; would make the flesh firm and expel every impurity; and was a chemical secret known only to Madam Yale. The analysis of this preparation showed that it was mainly a saturated solution of borax in orange flower water. For Yale's Antiseptic it was claimed on the package that it was a preventive of prickly heat, nettle-rash, eczema, and all diseases of the skin and scalp; was a perfect germicide and an antiseptic and a sure preventive of typhoid fever. The analysis showed that it consisted of 97.6 per cent. of volatile matter (16.96 per cent. of alcohol, 4 per cent. of formaldehyde, and 76.64 per cent. water), 2.37 per cent. of boric acid, and aromatics. For the Blush of Youth it was claimed on the package that it was as refreshing as concentrated dew, pure as purity; that it would spiritualize the expression, give the countenance the glow, lustre, and

beauty of childhood, and preserve the morning of life indefinitely. The analysis showed that it consisted of 56.15 per cent. of volatile matter (6.30 per cent. of alcohol and 49.85 per cent. of water, colored with a coal-tar dye and perfumed), and about 43.85 per cent. of glycerin. It needs no further evidence than the foregoing analyses to convince you that these several preparations were flagrantly misbranded. The goods were seized and confiscated by the Government, and the labels have since been reformed.

Only a short time ago the Department had occasion to report a case against a company in New Jersey which had shipped from that State to Illinois ten barrels of saltpetre. The saltpetre was adulterated, since it differed from the Pharmacopœial standard, which is 99 per cent. pure, while it contained a little more than 7 per cent. of sodium chloride. It was also misbranded because labelled "saltpetre," when in fact it was not saltpetre within the definition of the Pharmacopœia. The manufacturers were convicted and fined.

Although not strictly a drug, it is doubtless true that mineral waters are sold by most druggists. The Department of Agriculture has had occasion to examine a number of mineral waters, and in two instances, which I will mention, has found it necessary to institute proceedings against them.

One case involved a water sold extensively in the District of Columbia under the name of "Great Bear Spring Water." Samples of this water were collected by the Department and their analysis showed that the water was adulterated because it contained the colon group of organisms. A large quantity of the water was seized, condemned, and destroyed.

Samples of another water sold in and around the District of Columbia under the name of "Basic Lithia Water" were procured and analyzed. The bottles containing this water were labelled, among other things, "Uric acid solvent. A pure, light, freestone, lithia water. Invaluable as a constant and exclusive drinking water, and in the prevention and cure of rheumatism, gout, malaria, typhoid fever, and diseases of the kidneys, liver, blood, and nerves." Analysis showed that there was practically no lithium carbonate in the water nor any other substance which would warrant the statements as to medicinal virtues made on the label, and further that it contained the colon group of organisms, and was, therefore, unfit for human consumption. Ninety-six bottles of this water were seized, confiscated, and destroyed.

I think it may be helpful to you, to indicate briefly some of the legal points, which, from the experience of the Department, come up almost daily under this law in the conduct of a drug business.

In purchasing your drugs from the wholesaler, manufacturer, or any other source, you should require the person or firm from whom you make the purchase to give you a guaranty. In this connection you should bear in mind that a guaranty is of no protection to you unless given to you by the person from whom you purchase. A serial number guaranty will be of no avail to you unless it represents the guaranty of the person from whom you purchase. If you purchase from a jobber a drug bearing the serial number of the manufacturer who sold to the jobber, that guaranty will avail you nothing, because the law says that the guaranty to be of any protection to you must be from the party from whom you purchase. In this instance, then, you should require the *jobber* to give you a guaranty.

The law requires every package or bottle containing a drug which is, in whole or in part, alcohol, morphine, cocaine, opium, or certain other related dangerous or habit-forming drugs mentioned in the Act, to bear a statement thereon of the quantity and proportion of these substances. Now you will observe that you must not only state the name of any one or more of these substances in the preparation, but you must also disclose the quantity or proportion present. In declaring these substances, the intent of the law is that they must be stated in common commercial terms, not under names known only to chemists or physicians. For instance, alcohol should be declared as such and not as "spiritus rectificatus." And, as I have heretofore stated, you cannot escape this requirement of the law by omitting to put labels on the packages or bottles containing these substances. I may say that this precaution will not ordinarily affect the retail druggist, since he rarely engages in interstate commerce, but if he should do so, even in one or a few instances, he will do well to observe the requirements of the Act.

The law denounces as "misbranded" any drug the label or package of which bears a statement, design, or device which is misleading, false, or deceptive in any particular. This is plain language and easily understood, and all that it requires is the whole truth. Extravagant claims for curative qualities of drugs should be avoided.

I assume you all know that the Act embraces within its provisions any substance intended for cure, mitigation, or prevention of

disease in *animals* as well as in human beings, so that all I have said in reference to these precautions applies as well to drugs for animals lower than man as to those for man himself.

You should bear in mind another requirement of the Act, which is that any drug recognized in the United States Pharmacopœia or National Formulary, when sold under the Pharmacopœial name, must conform in strength, quality, and purity to the standard laid down therein, unless the actual standard of strength, quality, or purity of the drug is plainly stated on the bottle or other container.

I would particularly admonish and counsel you to avoid any attempt to circumvent the letter of the law by doubtful constructions of its terms. The law is designed to prevent frauds, imposition, and deception in commercial relations with customers and fellow citizens.

The Department of Agriculture asks of the Utah Pharmaceutical Association, and of every pharmacist in this country, that they will use their best endeavors to assist in the enforcement of the Food and Drugs Act. Its benefits to you are apparent and its benefits to the country as a whole cannot be overestimated. The retail druggist can aid the Department in the enforcement of the law by disseminating information concerning it and what is being done to enforce it. He can aid by insisting on having drugs as close to the standard strength as possible, irrespective of allowable deviations as stated on the label. He can also aid materially in endeavoring to secure legislation in his own State in conformity with the Federal law; and, finally, he can aid by reporting to the proper authorities any infringement of the law which comes under his notice. The Department is always glad to receive such reports, if made in good faith, and the source of information is always treated as confidential.

The wholesale druggist can assist the Department by handling only such goods as are in full compliance with the law. Many wholesalers have their own pharmacists and analyze all goods purchased by them, and they are in a position to inform the Department who are the violators of the law and also what manufacturers are selling goods at prices lower than the pure products should bring. The wholesalers can also be of assistance by allowing the Federal inspectors to go through their stocks to look for misbranded or adulterated goods.

THE LEGAL ASPECT OF COMPOUNDING AND DISPENSING.

By Allen C. Thomas.

To the competent pharmacist or druggist the legal aspect of compounding and dispensing "has no terrors." Expressed simply, *the law* requires that he shall be equipped with a practical and technical knowledge of his vocation and that he shall exercise due care in the application of this knowledge.

By *the law* I mean those legislative enactments, sometimes called statutes, and that body of judicial decisions growing out of a determination of the points at issue in the particular cases presented to the Court for interpretation.

These decisions are based primarily on the general principles governing all obligations of a civil and criminal nature, and secondarily upon those principles peculiarly applicable to pharmacal jurisprudence.

Our civilization daily becomes more complex, changes and development give rise to innumerable questions of scientific, social, and economic importance, and new branches are constantly spreading from the tree of legal knowledge. How great these branches of jurisprudence may become, time alone can tell.

Little more than a century ago Blackstone, writing his commentaries, considered sixteen or seventeen pages sufficient to adequately summarize the law of corporations; to-day the commentaries of Seymour D. Thompson on this one subject cover six volumes of more than a thousand pages each and by no means has the last word been said.

From the year 1615 when King James I by letters patent constituted the apothecaries a separate company of London, distinct from that of the grocers, down to the present generation there was little or no legislation on the subject. So striking was this condition as to cause Ordronaux to say when writing, about 1869:

"Strange as it may seem in a country where so many law-making bodies are each annually producing a volume of enactments, intended to meet all present and future necessities of, or to supply all past deficiencies in, municipal government—strange as it may seem, a science so intimately related to human health and the preservation

of life, as that of pharmacy, has as yet received legislative recognition in but a very few States."

About that time, however, questions of public health were beginning to claim attention in this country and it has fallen to the lot of this generation to recognize and enforce their importance in the public economy, and within our recollection there has grown up that immense body of laws providing for public health and safety and held to be constitutional as a valid exercise of what is termed "police power."

In 1872 the first regulation of the business of druggist was attempted in this State and its operation was confined to the City of Philadelphia. In 1887 this regulation was enlarged and extended by the Act of Assembly of May 24 to include the State. This Act created the State Pharmaceutical Examining Board and authorized it to exercise supervision over the pharmacists of this State in accordance with the provisions of said Act. Then it may be said the profession of pharmacy was established in Pennsylvania.

The enactments first considered the status of the pharmacist and aimed to restrict the profession to competent and qualified persons, requiring of every practitioner that he obtain a certificate of competency and qualification from the State Pharmaceutical Examining Board, and prescribing the manner of obtaining said certificate and distinguishing between the qualified assistant and the registered manager. The Act provided certain penalties for such as violated its provisions. Section 6 applied to any person engaging as manager without having obtained such certificate, three exceptions being noted: first, the practitioner of medicine who supplied his own patients; second, the storekeeper dealing in commonly used medicines and poisons; and third, the makers and dealers in patent medicines. Section 8 provides that no person shall be allowed by the proprietor or manager of any store to compound or dispense the prescriptions of physicians except under the immediate supervision of said proprietor or his qualified assistant, unless holding a certificate.

Having thus established the status of the pharmacist, the legislature then concerned itself with the regulation of his business, respecting, first, the sale and registry of poisons, second, the quality and purity of his drugs. The development of the second of these regulations, viz., the quality and purity of drugs, has been most

conspicuous. Section 10 of the Act of 1887 related to the first of these regulations. A poison was defined to be any drug, chemical, or preparation which, according to standard works on medicine or materia medica, is liable to be destructive to adult human life in quantities of 60 grains or less. It was further provided "that no person shall retail any poisons without affixing a label printed or plainly written containing the name of the article, the word poison, and the name and place of business of the seller. Neither shall he deliver poison to any person without satisfying himself that such poison is to be used for legitimate purposes."

In addition to the above it is the further duty of any one selling or dispensing poisons which are known to be destructive to adult human life in quantities of five grains or less, before delivering them, to enter in a book kept for this purpose the name of the seller, the name and residence of the buyer, the name of the article, the quantity sold or dispensed, and the purpose for which it is said to be intended, which book of registry shall be preserved for at least two years and shall at all times be open to the inspection of the coroner or Courts of the county in which the same may be kept. Two exceptions are noted to this section of the Act: first, as to the dispensing of physicians' prescriptions specifying poisonous articles; second, as to the sale to agriculturists of such articles as are commonly used by them as insecticides.

The regulation of the quality and purity of drugs was referred to in Section 9 of the Act, and as there expressed was intended to prevent wilful and deliberate falsification or adulteration of drugs, the viewpoint being that of the correction of the pharmacist. In 1897 the viewpoint had changed and in the enactment of that year, of May 25, the subject is viewed from the standpoint of the public and with regard to their safety and protection. In other words, the element of intent on the part of the pharmacist is eliminated from the question and a fixed standard is established which he is required to follow and maintain.

This feature of the law has recently seen the greatest development. Simultaneously the Legislature passed the Dairy and Pure Food Acts. A comparison of these two Acts shows a remarkable similarity and speaks eloquently of the progress of the day toward the highest and best moral and scientific principles.

In view of its general importance, I feel justified in giving the text of the Drug Act.[1]

AN ACT

PREAMBLE.—*To prevent the adulteration, alteration, and substitution of drugs and medicinal preparations, and providing penalties for violation thereof.*

SECTION 1. Be it enacted, etc., That *No person shall, within this State, manufacture for sale, offer for sale, or sell any drug which is adulterated within the meaning of this Act. The term drug used herein shall include any medicinal substance or any preparation authorized or known in the "Pharmacopœia of the United States," or the "National Formulary," or the American Homœopathic Pharmacopœia, or the American Homœopathic Dispensatory.*

A drug shall be deemed to be adulterated within the meaning of this Act:

1. If any substance or substances have been mixed with it so as to depreciate and weaken its strength, purity, or quality.

2. If any quality, substance, or ingredient be abstracted so as to deteriorate or affect injuriously the quality or potency of the said drug.

3. If any inferior or cheaper substance or substances have been substituted in whole or part for it.

4. If it is an imitation or is sold under the name of another drug.

5. If the drug shall be so altered that the nature, quality, substance, commercial value, or medicinal value of it will not correspond to the recognized formulæ or tests of the latest edition of the "National Formulary," or of the "Pharmacopœia of the United States," or of the American Homœopathic Pharmacopœia, or the American Homœopathic Dispensatory, regarding quality or purity.

On complaint being entered, the State Pharmaceutical Examin-

[1] Since the preparation of this paper the legislation in the matter of the manufacture and sale of adulterated drugs has been revised by passage of the Act of Assembly of the 8th of May A.D., 1909, to be in force and effect from and after the first of October A.D., 1909. By this Act the method of enforcement of the law is somewhat altered, the powers conferred on the State Board extended, and while in some respects greater liberality is shown to the manufacturer and seller, provided the standard is correctly stated on the label, yet in other respects he is held to a stricter accountability in the manufacture and sale of pharmacal preparations.—A. C. T.

ing Board is hereby empowered to employ an analyst or chemist expert, whose duty it shall be to examine into the so claimed adulteration and report upon the result of his investigation, and if said report justifies such action, the Board shall duly cause the prosecution of the offender as provided in this law. Whoever violates any of the provisions of this Act shall be guilty of a misdemeanor, and upon conviction shall be fined a sum not exceeding one hundred dollars, or undergo an imprisonment not exceeding ninety days, or both.

SEC. 2. All laws or parts of laws inconsistent herewith are hereby repealed.

Approved—the 25th day of May, A.D. 1897.

DANIEL H. HASTINGS.

You will say a most exact and comprehensive enactment.

There is an important distinction observable between the Drug and Food Acts respecting labelling. In the latter Act Section 3 provides that it shall not apply to mixtures or compounds recognized as ordinary articles or ingredients of articles of food, if each and every package sold or offered for sale be distinctly labelled as mixtures or compounds and are not injurious to health.

Attorney-General Elkins in an opinion, reported 5 District Reports 104, respecting a mixture compounded of coffee and a certain amount of chickory, rye, wheat, or peas and labelled "Best Rio, Prime Rio, French Rio," and the like, with the additional words "coffee compound," declared this was to be considered an adulteration within the meaning of the Act and was not protected by the label, on the theory that such an article was not coffee and that the label "coffee compound" was not indicative of the actual fact, and further that coffee so adulterated is not an ordinary article of food and therefore not exempt from the penalties of the law.

Although the label may in some cases protect the manufacturer and vendor of foods, it will not save the manufacturer and vendor of drugs. There is no such provision in the Pure Drug Act and no matter what label is placed on the article, if it fails to conform to the standard pharmacopœial preparation it will be deemed an adulteration.

The question may be raised that the article is not a pharmacopœial substance and that the Act strictly applies only to such as are mentioned in the several authorities cited and thereby a possible means of evading the law be afforded.

This very point has arisen in the following form and may later be the subject of judicial interpretation: A purchaser had asked for camphorated oil and the article sold was labelled camphorated oil. The chemist, in making his analysis, discovered the preparation to be below U.S.P. strength and recommended a prosecution. The suit was started and the defense contended that the U. S. Pharmacopœia contained no such preparation, while the prosecution contended that the preparation was an adulteration of the U.S.P. article, linimentum camphoræ (camphor liniment).

How sufficient this defense or others of a similar nature will prove has not been determined; the above case is now pending trial. It is probable that some expert testimony may be required to properly inform the Court on the question of fact. It is, however, my opinion that the prosecution will prevail and the spirit of the Act be upheld.

In an opinion rendered to the State Pharmaceutical Examining Board, reported 14 District Reports, page 397, Attorney-General Carson advised the prosecution of manufacturers and dealers in this State making and selling what are in reality inferior preparations of formulæ that are present in the Pharmacopœia and National Formulary, but which are labelled in a manner different from that usually pursued by makers and vendors of standard preparations; where, for instance, instead of tincture of ginger U.S.P., which is usually labelled essence of Jamaica ginger, there is a preparation made consisting principally of capsicum, grains of paradise, or other pungent or hot drug and water with just sufficient alcohol to keep it from souring and a small quantity of ginger to impart certain of the characteristics of the genuine article, the product being then labelled "climax picnic ginger," "gilt edge ginger," that such matter was fully covered in the Act of May 25, 1897, and upon proper complaint made that it was the duty of the Board to employ an expert analyst or chemist to make examination and, if his report justify it, to proceed criminally.

Again I anticipate that the province of the Board may be attacked by the grocer who sells an article which he claims conforms to the standard of the National Act on this subject, and if this article is such as might be used according as the occasion demands, either as a flavor or a medicine, a defense might very naturally be made that the standard and quality being that required by the National Act, the State Board has no authority in the matter.

This is a new field. The State Board has only made a beginning in this department of its work. The present conditions of affairs, the trend of public opinion and professional spirit demand that the work shall proceed. The number of prosecutions are constantly increasing and I predict that this will eventually become a most fruitful source of litigation. The duty of preserving and conserving the welfare of the public and, as well, the rights of the profession have been delegated to the State Pharmaceutical Examining Board and the responsibility for the future progress in this field rests with that department of the Commonwealth.

There is an Augean stable to be cleaned and the effort will be bitterly resented and fiercely contested by the important interests attacked. The removal of the opportunity for illicit gains of the quasi druggist, the manufacturer, the wholesale grocer, and that army of proprietary medicine dealers masquerading under the name of druggist is bound to be opposed. Ethical and scientific as well as legal problems are involved. It would be well to see that your interests in the strenuous days to come are in the hands of capable, fearless men, men of integrity, foresight, and recognized standing.

Aside from the statutory enactments above referred to, which are treated as a branch of criminal procedure, there is that other branch of the law which is applied in the civil Courts. The pharmacist is bound to consider that vast body of law, the foundation of which is found in the generic principles of the law of contracts, sales, negligence, and agency.

It is not my purpose, nor is this the occasion, to refer to a mass of cases or to consider the various questions and phases of questions and the refined distinctions made by the Courts of the land generally on these subjects. Added to the regulations imposed by statute, the pharmacist would verily believe that he was travelling over legal quicksands that threatened every moment to engulf him. My subject confines me to a consideration of these principles as applied to conditions developed out of the practice of pharmacy, and my duty I conceive to be to deduce certain general working principles. These principles are similar to and have developed out of the law governing commercial transactions. The nature of the pharmacist's business, however, imparts to his business a greater degree of responsibility in proportion to its hazardous nature.

The pharmacist contracts to use the right kind of drugs, drugs that are of proper strength, and to compound such drugs with a degree of care made necessary by his peculiar business and the

possible serious consequences, and he guarantees in the operation of his business that he possesses the requisite scientific knowledge and skill.

The common law doctrine, *caveat emptor,* let the purchaser beware, is reversed in the case of the pharmacist and the doctrine is that of the civil law, let the seller beware, *caveat venditor.*

In the case of Fleet vs. Hollencamp, 10 Massachusetts Reports 197, the plaintiff sued the defendant for negligently permitting a portion of the poisonous drug, cantharides, to be intermingled with some snake root and Peruvian bark, which latter he had been ordered to take on the advice of his physician and in consequence of which he had been rendered very sick. It seems that a short time before the defendant, or an employee in his store, had ground up the cantharides and without cleaning the mill had prepared the preparation ordered by the plaintiff. The Court in its opinion stated that "the general customer is not supposed to be skilled in the matter and, as represented in this case, does not know one drug from another, but in the purchase of drugs the customer must rely upon the druggist to furnish the article called for and in this particular business the customer who has not the experience and learning necessary to a proper vending of drugs would not be held to the rule that he must examine for himself. On the contrary the business is such that in the very nature of things the druggist must be held to warrant that he will deliver the drug called for and purchased by a customer. It must be considered, as decided in this case, that the pharmacist is guilty of negligence if he does not apply the knowledge and skill he is presumed to have with ordinary care, but as was said in Brown vs. Marshall, 47 Michigan Reports 576, the pharmacist is held to a stricter accountability in the matter of the ordinary care exercised by a prudent man, because of the possible serious consequences of his act and because of his superior knowledge."

The responsibility is the same in compounding a prescription as in dispensing a drug and the proprietor is responsible for the acts of his clerk, if the latter is acting within the scope of his employment. In the case of McCubin vs. Hastings, spirits of camphor was substituted for camphor water, ordered in the prescription of the attending physician. The prescription was compounded by the clerk in the store of the defendant. The defendant was absent from the city at the time and the services of this clerk had been engaged by his brother. The Court, nevertheless, held the defendant was none the less responsible, the employment was

authorized, and his responsibility for the acts of his employees cannot be disputed. The contention that a master is only responsible for the acts of his servants when he might have prevented the act and did not, was dismissed, the Court saying there would be no responsibility in the principal except for such acts as were done in his presence.

In the same way liability may be incurred by improper labelling. In the case of Thomas vs. Winchester, 6 N. Y. 397, a physician had prescribed a dose of dandelion for the wife of the plaintiff; the article sold was belladonna, which was believed at the time to be dandelion and was so labelled. The resident druggist had purchased the article as extract of dandelion from Aspinwall, a druggist of New York. Aspinwall bought it of the defendant as extract of dandelion, believing it to be such. The judge charged the jury that if they should find from the evidence that either Aspinwall or the local druggist was guilty of negligence in vending, or that the plaintiff or those who administered it to her were chargeable with negligence, the plaintiff was not entitled to recovery, but if they were free from negligence and if the defendant was guilty of negligence in putting up and vending the extracts in question, the plaintiff was entitled to recover. The defense that there was no privity of contract between the plaintiff and a remote vendor of the medicine, the Court held could not be maintained. It was decided that in labelling a poisonous drug with the name of a harmless medicine for public market there can be no doubt of liability in civil action.

The facts in one other case may be interesting dealing with the question of contributory negligence where the plaintiff went to a jar of belladonna, took out on the point of his knife what he thought was a dose of extract of dandelion, and called the attention of one of the defendants to it and asked if it was a proper dose and thereupon took it, where, it appears the jar was properly labelled. The question of the plaintiff's contributory negligence was raised and considered sufficient to defeat his contention that the defendant was guilty of negligence in not discovering the plaintiff's danger, although the plaintiff had consulted him with regard to the size of the dose. One of the judges filed a dissenting opinion to the effect that if the defendant had seen or was aware of the plaintiff's danger and failed to exercise ordinary care to prevent it, he would be liable.

Gibson vs. Torbert, 115 Iowa 163, is authority for the rule that no liability attaches to a druggist for injuries to a customer for

lack of instructions. It has also been held that if a prescription is so illegibly written that, notwithstanding ordinary care, a mistake is made the druggist is not liable in damages.

It may thus be seen how close these matters come to the individual and how much a correct understanding of them serves to raise the profession in the esteem of the public. The passage of such laws as I have referred to effects this laudable purpose and advances the standing and reputation of the profession. No longer is the pharmacist regarded as a charlatan or held in disrepute as one who plies a dark and mysterious trade. The prevailing opinion of the apothecary a few centuries back is well illustrated by a passage from "Romeo and Juliet":

> "I do remember an apothecary,—
> And hereabout he dwells,—which late I noted
> In tattered weeds, with overwhelming brows,
> Culling of simples; meagre were his looks,
> Sharp misery hath worn him to the bones:
> And in his needy shop a tortoise hung,
> An alligator stuffed, and other skins
> Of ill-shaped fishes; and above his shelves
> A beggarly account of empty boxes,
> Green earthen pots, bladders and musty seeds,
> Remnants of packthread and old cakes of roses,
> Were thinly scattered to make up a show.
> Noting this penury, to myself I said
> 'And if a man did need a poison now,
> Whose sale is present death in Mantua,
> Here lives a caitiff wretch would sell it him.'"

All this is changed and with the enactment of the statutes and the application of the principles above referred to we are twice blest, "it blesseth him that gives and him that takes." They at once promote the dignity of the profession and become a boon to the public. As has been ably said and may be appropriately quoted by me in closing,

"Understood and appreciated by the public, protected and fostered by the law, the calling of the pharmacist is rising to its legitimate place of dignity among the learned professions of the world; and the men who represent it are now the peers of any in respectability and social standing, as they have always been in intelligence and learning."

THE CAPTURE OF THE PHARMACOPŒIA; WITH SUGGESTIONS FOR ITS RECAPTURE.*

By Henry Leffmann.

My object in this paper is to present briefly the course of events by which the substantial control of the United States Pharmacopœia has passed from the physicians to the pharmacists and to suggest another plan of revision. Some persons who have heard mention of the title of the paper have inferred that I am intending to criticize unfavorably the pharmacists, but my disapprovals are for the doctors who by the neglect of the work of revision have obliged the pharmacists to take it up.

The United States Pharmacopœia in its inception was a purely medical document. The data that I present on this point are derived solely from the book itself. The first step towards a national regulation of the quality of drugs was taken when Dr. Lyman Spalding, in 1817, presented before the New York County Medical Society a plan for convening the principal medical institutions and societies in four districts of the country, arranged according to geographic convenience, which four conventions were to send delegates to a national convention at Washington. As the history of the movement has often been presented I need do no more than give a brief outline. Dr. Spalding's suggestion bore fruit, and on January 1, 1820, the first convention assembled at Washington, D. C. The book was published in December of that year, being the only issue which appeared in the year of its convention. The members of the convention were few, and all had the M.D. degree. In the discussions and agitation for the calling of the convention, it does not appear that the druggists and apothecaries were regarded as parties to the framing of the book, though the convention by resolution encouraged them to use it. It was decided to sell the copyright for ten years and to use this money to pay the expenses of the convention, and if a surplus remained to distribute it among those medical organizations that had sent delegates. At the first convention the decennial revision system was established, changes in the interval being forbidden. It must be noted that at the time of calling of this convention no college of pharmacy existed in this country, the oldest

* Read at the meeting of the Philadelphia County Medical Society, March 24 (Wednesday).

of such institutions, The Philadelphia College of Pharmacy, having been founded a year later. The title page of the first Pharmacopœia bears the statement that it is published "by authority of the medical societies and colleges" and it was bilingual, the Latin and English text appearing on facing pages. It was a small volume, and had two lists, one of the materia medica and one of preparations. The bilingual text was not used in any subsequent edition, but the distinction between materia medica and preparations was maintained through several revisions.

In the three following revisions, 1830, 1840, and 1850, the declaration of exclusive medical control was continued in a statement on the title pages that these editions are issued by the "authority of the National Medical Convention." In all the earlier conventions the number of delegates was small, and in one case several congressmen were made part of the membership, because they were graduates in medicine.

The convention of 1840 originated the formal Committee of Revision. At this time the co-operation of colleges of pharmacy was invited, but the members of the Committee of Revision were still all physicians. This committee consisted of seven persons, of whom three were Philadelphians.

Representative pharmacists were present as full delegates for the first time in 1850. The Philadelphia College of Pharmacy sent three and the New York College two. It is to be noted that a delegate was present from the Medico-Chirurgical College of Philadelphia. About thirty delegates in all were present: the revision committee consisted of eight, of whom one was a pharmacist. Three members of the committee were Philadelphians.

The next revision (1860) eliminated the exclusive medical authority, the volume being designated as issued "by the National Convention for Revising the Pharmacopœia." The convention consisted of twenty physicians and ten pharmacists. The revision committee in addition to the president (a physician and member *ex officio*) consisted of four physicians and four pharmacists, but one of those having the degree of M.D. and here counted as a physician was practically a pharmacist in his relations to the revision.

The convention of 1870 consisted of over sixty delegates in actual attendance, about one-third being pharmacists. The revision committee, consisting of fifteen members, had about the same proportion of the two classes of delegates. In this committee were one

New York delegate and four Philadelphia delegates. I have laid some stress on the extent to which Philadelphia influence was shown in these committees because, on the occasion of the publication of the revision of 1880, a change occurred that gave rise to much feeling. The revision committee consisted of twenty-five members, about equally divided among physicians and pharmacists. New York had six representatives and Philadelphia four. With the exception of the first edition—1820, printed in Boston—all the revisions had been printed in Philadelphia, but the control that New York secured broke the chain and the revision of 1880 was published in that city.

It is not necessary to discuss in any detail the classification of the conventions and revision committees of 1890 and 1900. The pharmacists had passed into substantial control, and in the last revision committee the proportion of actually practicing physicians is quite small. The last convention took a step of great importance in providing for a Board of Trustees. It is interesting to determine how far the two classes of delegates have been considered in the appointment of this Board and I think when one looks at the constitution of it and at the list of those who, outside of the revision committee, have been consulted during the preparation of the 1900 revision, the expression " Capture of the Pharmacopœia " is justified.

The revision committee consists of twenty-six members, including the president of the convention. Twelve of these have the M.D. degree, but among these at least four are not engaged in clinical work and three others are more directly interested in pharmaceutic work, being either connected with colleges of pharmacy or representing pharmaceutic associations in the convention. It appears, therefore, that on a strict construction only five of the revision committee represent medical practice in its bedside features. During the five years that the committee was at work it consulted about twenty-five outsiders, but even in this list we find only two or three who represent the medical profession.

The Board of Trustees is composed of seven persons, of whom two have the degree of M.D., and one of these is a professor in a college of pharmacy.

What inferences may be drawn from these facts? Not that the profession should return to the plan of 1820. It is true that the history shows that the regular medical profession has neglected its duty in this matter as it did in regard to medical education, allow-

ing abuses of the college methods to go on for many years. The colleges received students insufficiently prepared and graduated them without sufficient instruction; not in a few instances, but by thousands. A few persons saw the dangers of the college methods as a few doctors have seen the duty of the profession in regard to the Pharmacopœia. Much has been at last accomplished in medical education due almost entirely to the efforts of the regular medical profession, for the irregular schools have never done anything revolutionary in this respect; they have followed, not led, the movement.

I have made part of my title "the recapture" of the Pharmacopœia; but I am not of the opinion that the control of the pharmacist has been necessarily to the disadvantage of revision. What course matters would have taken if the medical profession had continued in absolute control cannot now be determined; but it is a condition that now confronts us, not a theory. The work is, I th'nk, unnecessarily cumbersome and contains a good deal of unnecessary matter, but it is the object of this essay to look ahead, not backward.

It is, in my opinion, now time to make the United States Pharmacopœia a national work in the full sense of that expression. We live in a very different world from that in which the book had its origin. The little band of doctors that met in Washington on New Year's day, 1820, in the hot youth of the Republic, when George III was King and James Monroe President, would have been shocked to hear that a time would come when Congress would make a law establishing the provisions of the Pharmacopœia as a legal standard. They would have regarded such a drift toward centralization as a blow to republican institutions and in destruction of American liberty. We moderns feel no such alarm, recognizing that all the steps toward a better union are over the ruins of State individualism. Now that penal enactments give the requirements of the Pharmacopœia the force of law it is but wise and just that the framing of these requirements should be carried out under official sanction. The United States Government should summon the convention and provide for the expenses of the delegates. There is no need for the numerous attendance that has become customary of late years. There is no reason that every college and society of pharmacy and medicine should be authorized to send accredited delegates. The work of the last revision was done by a few men, not more than twenty-six authorized persons in all, and from what I have learned in a very large experience of committees, boards, and commissions,

I feel inclined to say that if the minutes of the revision committee were published, it would be found that a few competent and active spirits did most of the work and determined the main lines of policy. If the American Medical Association and the American Pharmaceutical Society were each authorized to send, say, ten delegates, and the medical departments of the Army, Navy and Marine-Hospital Service each, say, three delegates, a convention could be held fully as representative as any that has ever assembled for such a purpose. The publication should be carried out by the United States Government. A Committee of Revision should be designated which would have power to make necessary changes in the interval between revisions. Revisions should be once in five years. The decennial revision satisfied the conditions of 1820, but progress in pharmacy and medicine is too rapid now for such a long interval. The preparation of the revision should not occupy over one year. The circumstances that attended the publication of the last revision, namely, that it took five years to finish, are wholly inconsistent with the principle on which such a work is published.

During the preparation of the revision the work should be brought before the public for discussion through publication of the more important suggested changes in the leading medical and pharmaceutic journals. In this manner important criticism will be available, some errors and inconsistencies would be avoided and no injury would be done to any one. I think that the size of the book could be materially reduced, without interfering with its usefulness in the field for which it is intended. Many of the analytic processes could be included in special bulletins as is now done in food analysis work, and to these the special workers could refer.

A work that determines the conditions on which criminal proceedings are brought should originate and be controlled by official authority, not by private management. The framers of the current revision recognized that the book had become a danger in this respect and placed in it a formal statement that it is a standard for drugs and not for foods. Under the sanction and control of the general government, the book will become in reality the "United States Pharmacopœia."

THE PHARMACISTS AND THE UNITED STATES PHARMACOPŒIA.*

By George M. Beringer.

Dr. Henry Leffmann has presented for your consideration the fact that the Pharmacopœia of the United States originally prepared and published "by authority of the medical societies and colleges," has gradually, through the medium of the decennial conventions for revision to which pharmaceutical societies were invited to send delegates, become the joint work of both physicians and pharmacists. In the later revisions the influence of the pharmacists has become so prominent that he accuses the medical profession of neglecting its duty and surrendering the Pharmacopœia to the pharmacists who have by this bloodless victory "captured" the book and now control and decide its character.

Without gainsaying the statements presented by Dr. Leffmann, I desire to present a picture taken from a different viewpoint. I will venture to advance as a preliminary proposition, that the present condition and control is but the result of the natural evolution of pharmacy as a distinct branch of medicine and is due to the progress and changed conditions in the practice of medicine that has taken place since 1820, when Dr. Lyman Spaulding edited the first edition of the Pharmacopœia of the United States.

The student of the history of pharmacy knows that during the period of the early settlements and throughout the colonial period in America, pharmacy was not practised as a distinct art and calling. The early "apothecary shops" were mainly the dispensaries of physicians for supplying their patients and the mixing was usually entrusted to an apprentice or beginner in the study of medicine. It was about 1765, that Dr. John Morgan introduced in Philadelphia the practice of writing prescriptions, or, as he styled it, "the regular mode of practicing physic." He argued that "the very different employments of physician, surgeon, and apothecary should not be followed by any one man; they certainly require different talents. Let each cultivate his respective branch apart, the physician, surgeon, apothecary, etc.; the knowledge of medicine will then be daily improved, and it may be practised with greater accuracy and skill."

* Presented before the Philadelphia County Medical Society, March 24, 1909.

The early part of the nineteenth century may be considered as the formative period of pharmacy on this continent, and in 1821 the Philadelphia College of Pharmacy was instituted as the first school established for the education of apothecaries in America. One of the very first acts of this college was the appointment of a committee on the Pharmacopœia, thus evidencing the early and active interest of its members in having correct formulas and national standards for drugs and medicines. This committee reported in June, 1821, when the first U. S. Pharmacopœia was scarcely six months old, and recommended a continuance of the committee to institute a further examination of the book with a view of correcting the errors it contained.

The first revision of the Pharmacopœia, following the convention of 1830, was published in 1831, and was edited by Dr. George B. Wood, then a professor in the Philadelphia College of Pharmacy, and Dr. Franklin Bache, who in the same year became its professor of chemistry. Is it not fair to assume that the editors incorporated the views and suggestions for improvements arising from its members? It will be thus seen that from the very commencement of pharmaceutic activity and organization in America, pharmacists have exerted a marked influence on the revisions of the Pharmacopœia. While it is true that the Pharmacopœial convention of 1850 was the first to which incorporated colleges of pharmacy were invited to send delegates, the action of the preceding convention was, however, quite significant of the inevitable trend of progress. The convention of 1840 authorized the Committee on Revision to request the co-operation of colleges of pharmacy. In response to that request a committee of the Philadelphia College of Pharmacy prepared a report. Preceding the receipt of this report the Committee on Revision had prepared its review and was ready to proceed to publication. However, when the report of this college was received in 1841 they rewrote their book and in the preface to that revision occurs the following reference: "This contribution from the Philadelphia College of Pharmacy consisted of a revised copy of the Pharmacopœia, elaborated with ability and great industry and presenting, along with numerous individual additions and alterations, some new features in the general plan. It, therefore, required close attention and deliberate examination on the part of the committee who found themselves under the necessity of going over the whole ground which they had recently traversed."

It is not too broad an assertion to state that the pharmacist is in the Pharmacopœial convention and on the Committee on Revision because his special training and knowledge are necessary to the success of the work, and his brother, the practitioner of medicine, early recognized this and sought his co-operation. In 1841, William Procter, Jr., was engaged as secretary of the Committee on Revision and in their behalf made numerous experiments on the preparation of such chemical products as ether and Hoffman's anodyne. The following is a copy of an original autograph letter which is now preserved in the archives of the Philadelphia College of Pharmacy:

"April 3d, 1860.

"My Dear Mr. Procter:—

"I send you herewith most cheerfully my check for $100, which I consider but a small compensation for the services rendered by you to the committee of the Col. of Physicians in revising the Pharmacopœia.

"Very truly yours,
"Geo. B. Wood."

It must be constantly borne in mind that the Pharmacopœia is largely a book of formulas, and that the methods of manipulation and proper combination of drugs are important to the success of the preparations, and hence the skill acquired by the pharmacist in the practice of his art is necessary in the framing of correct processes and directions for manufacture of the medicines.

The Pharmacopœia reflects the progress of medicine and of medicinal sciences along certain lines only and its scope precludes the recognition of advances in other directions either entirely or nearly so. To illustrate, it can only incidentally recognize advances in therapeutics, pharmacology, surgery, electropathy, etc., by introducing the formulas for such remedies as may become useful from such progress. On the contrary, progress in pharmacognosy and the chemistry of drugs and medicines come within its proper field and must be accorded ample consideration, and it is noteworthy that in the recent revisions they have claimed marked attention and have enhanced the value of the book as well as materially increased its size and altered its character. Here again, we are confronted by the fact that these are in the domain of pharmaceutical study and application and naturally account for the prominence and influence

of pharmacists in the recent revisions. So we see that the " capture " has not been by design, nor by accident, but is only following the proper lines of Pharmacopœial scope and progress and the development of professional pharmacy.

I am compelled to doubt the wisdom of the recommendation to restrict the membership of the convention to delegates from the American Medical Association, the American Pharmaceutical Association, and the various branches of the medical service of the National Government. One of the most encouraging signs of the time is the greatly increased interest in the Pharmacopœia. This is not only noticeable in the medical profession, but also in all branches of the drug trade and chemical industries. Its adoption as a legal standard by the Food and Drugs Act has made these manufacturers and dealers and importers take notice of its requirements, and everywhere there is manifested a sincere desire for its improvement and to make its descriptions, tests, and requirements practical and accurate.

Probably one serious error in the preparation of the book in the past has been the lack of interest shown by the practical men, who permitted the teachers and theorists to assume all the burdens. While proud of the last revision, we must recognize that, like all human works, it is far from perfect. Dr. Leffmann is quite right in demanding that practical clinicians should be represented on the Committee on Revision. The National Wholesale Druggists' Association has likewise by resolution expressed itself: " That there should be added to the committee several chemists of large experience in manufacturing and one or more druggists who are familiar with the drug markets of the world." So we see that the next convention will be confronted with a problem of how to recognize all the interests that desire to assist in the preparation of the revision and not enlarge its membership or that of the Committee on Revision. I quite agree with the statement attributed to Prof. Joseph P. Remington, the chairman of the Committee on Revision, that " The larger the number of interests represented in the next Pharmacopœia the better for the book." In the light of past experience the convention should certainly exercise critical judgment in selecting the future committee to obtain the best talent and the most practical knowledge and at the same time eliminate dead wood.

The proposition to have the work of revision under government sanction and control and the Pharmacopœia published by the United

States Government is to my mind, at the present time, an exceedingly dangerous one. The tendency to autocratic and beaurocratic officialism is but little less obnoxious than the tendency to partisanship and political domination and this would preclude much of the most independent and most reliable work. Official jealousy and suspicion would most likely discredit valuable work of the practical manufacturer, the experienced clinician, or pharmacist. I doubt if we are yet ready to adopt paternalism in this connection with all of its possible attending evils.

The government does not publish the standard legal works and text-books on law and there is no more justification for it to engage in publishing legal works on medicine and pharmacy.

No one interest or set of men, however learned as specialists, could to-day prepare a Pharmacopœia that would be satisfactory, because as a legal standard so many varied interests become affected by it. Equity and justice demand the co-operation of all of these interests and likewise that of the government service.

The United States Pharmacopœia is not yet perfect and every interest concerned should be encouraged to assist in its improvement and perfection. There is hardly a subject that will not permit of further study and investigation, and much experimental work is yet needed to determine the scientific accuracy of descriptions, assays, and processes. These are the very avenues of progress and they should be kept open and inviting.

Let us by all means avoid the fate of Hindoo learning so graphically portrayed by the author of "Ben Hur" in the language attributed to Melchoir in the meeting in the desert: "Such, O brethren, are the Great Shastras, or books of sacred ordinances. They are dead to me now; yet through all time they will serve to illustrate the budding genius of my race. They were promises of quick perfection. Ask you why the promises failed? Alas! The books themselves closed all the gates of progress. Under pretext of care for the creature, their authors imposed the fatal principle that a man must not address himself to discovery or invention, as Heaven had provided him all things needful. When that condition became a sacred law, the lamp of Hindoo genius was let down a well, where ever since it has lighted narrow walls and bitter waters."

IS FORMALDEHYDE PRODUCED BY BOILING SOLUTIONS OF CANE SUGAR?*

By Charles H. LaWall.

About a year ago A. A. Ramsay published a statement [1] to the effect that when solutions of cane sugar are boiled without pressure at from 100° C. to 103° C., as would be the case in making jellies and preserves, formaldehyde is produced in appreciable amounts. This paper was widely quoted and was said to render valueless the tests for formaldehyde applied to jellies, preserves, etc.

As this result was contrary to observations made by the writer in the examination of a large number of samples of jellies, etc., all of which gave negative results when tested for formaldehyde, it was concluded to make some further experiments with a view to ascertaining the correctness of the statement.

Upon examining Ramsay's paper the most striking point was the fact that the only reaction used to detect formaldehyde was the well-known Hehner milk-sulphuric acid test, which was applied to various fractions of the distillate. It is a well-known fact that this same Hehner test is a group reagent for various aldehydic bodies, and that it is likely to lead to erroneous conclusions when unsubstantiated by any other test was shown in a paper read by the writer before the Pennsylvania Pharmaceutical Association in 1905, and published in several journals at that time, to the effect that vanillin, which is methylprotocatechuicaldehyde, gives positive results by this test, and that samples of vanilla ice cream, therefore, will always be reported as containing formaldehyde when examined for that substance by the Hehner test alone.

At the time that observation was made it was shown that the most satisfactory confirmatory test is the Rimini test with phenylhydrazine hydrochloride and sodium nitroprusside, followed by solution of sodium hydroxide, which produces a decided blue color in the presence of 1 part of formaldehyde in 500,000 of solution, and which has the additional advantage over the Hehner and other sulphuric acid contact tests that there is no danger of carbonization and consequent obscuring of the test when applied to solutions containing sugar.

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* Read at the April meeting of the Scientific Section of the Philadelphia Branch of the A. Ph. A.

[1] *Journ. and Proc. Royal Soc. of New South Wales*, 41, 172, abstracted in the *Analyst*, vol. 34, p. 28.

In addition to this, the writer also had ample confirmation of the fact, which Ramsay reported negatively, that furfuraldehyde is produced when cane sugar solutions are boiled. The following experiments, therefore, were conducted with a view to ascertaining the behavior of distillates, obtained under the same conditions as described by Ramsay, to the Hehner test, to the Rimini test, and also to the recently published tests for furfuraldehyde by means of solution of aniline acetate.[2]

A 20 per cent. solution of cane sugar was boiled for some time and then distilled, the distillate being collected in several fractions, designated as No. 1 and No. 2 in the tabulated statement of results. Check tests were made simultaneously with formaldehyde solutions containing respectively 1/50,000 and 1/1,000,000 of that substance.

A solution of commercial levulose was then distilled in the same manner as the sugar solution and the same tests were applied.

A 20 per cent. solution of cane sugar was boiled and distilled with 1 per cent. of citric acid, and a similar solution was prepared with tartaric acid and likewise distilled and tested as in the foregoing cases. Check tests were also carried out, using furfuraldehyde in dilute solution, one being made with commercial furfuraldehyde, the other prepared by boiling bran with diluted sulphuric acid and distilling, thus obtaining the furfuraldehyde freshly for the experiments.

The tabulated results of these experiments are as follows:

	Hehner's test for formaldehyde	Rimini test for formaldehyde	Analine acetate for furfuraldehyde
Cane sugar distillate No. 1.....	positive	negative	positive
Cane sugar distillate No. 2.....	positive	negative	positive
Formaldehyde 1/50,000	positive	positive	negative
Formaldehyde 1/1,000,000	positive	positive	negative
Levulose distillate	positive	negative	positive
Cane sugar distillate (with citric acid)	positive	negative	positive
Cane sugar distillate (with tartaric acid)	positive	negative	positive
Commercial furfuraldehyde	positive	negative	positive
Freshly made furfuraldehyde.....	positive	negative	positive

By the foregoing results it will be clearly seen that the Hehner test reacts positively with every solution tested, while the Rimini test gives positive results only with those solutions to which formal-

[2] Bulletin 110, U. S. Dept. of Agriculture, Examination of Commercial Honeys.

dehyde had been added, and that the aniline acetate test gives positive results for furfuraldehyde in every solution except those prepared with formaldehyde alone, in which it could not possibly have been present except as an impurity.

From the nature of the reaction it would be fair to conclude that if formaldehyde were produced under such conditions as have been described it would be found in a concentrated form in the residue. The residue in the flasks, therefore, after the distillation of the plain cane sugar, the levulose, and the two lots of acidulated cane sugar solutions, were all tested for formaldehyde by the Rimini test, carrying alongside blanks prepared from part of the same residue, to which formaldehyde in the proportion of 1–100,000 had been added to ascertain if there was any substance present which would interfere with the detection of formaldehyde under these conditions. These tests resulted negatively in each case where the plain residue was tested and positively in each case where formaldehyde was known to be present.

Check experiments were then made with the distillate from bran containing furfuraldehyde freshly prepared and it was found that when this distillate was very much concentrated there was a slight observable difference in the color of the Hehner test as compared with that produced by formaldehyde alone, but that diluted solutions of furfuraldehyde could not be distinguished from formaldehyde, either in the intensity or the color of the reaction.

A number of samples of commercial jellies and several of home origin were then distilled and the distillate tested by the foregoing methods. In every case the Hehner test gave positive results, as did also the aniline acetate test for furfuraldehyde, while in not a single instance could even a faint reaction be obtained by the Rimini test, either in the distillate or in the concentrated residue left after the distillation.

The conclusion is obvious, therefore, that cane-sugar solutions do not develop formaldehyde when boiled under ordinary conditions, but that furfuraldehyde is produced, which reacts in such a manner with the Hehner test as to deceive the analyst who relies upon it alone, without confirmation by the Rimini test.

CORRESPONDENCE.

EDITOR OF THE AMERICAN JOURNAL OF PHARMACY,

DEAR SIR:

At the recent meeting of the P. Ph. A. it was stated on the floor of the meeting by the Honorable Theodore Campbell, a member of the State Legislature, from Philadelphia, that the Internal Revenue Office had information which would lead them to believe that a number of druggists in Pennsylvania and other States were selling alcohol without having taken out the necessary $25.00 Internal Revenue special tax, commonly called the retail liquor dealer's license.

Failure to take out this license subjects the proprietor of any store selling alcohol to an additional penalty of 50 per cent., making a total of $37.50, and the Internal Revenue authorities would be compelled to go back as far as they could secure evidence, even to the time of the dealer starting in business, and collect the $37.50 penalty for each and every year.

It was a surprise to me and to many of the members to find that there were druggists foolish enough to attempt to evade this law, but a consultation with the Internal Revenue collector for this district and his deputy have convinced me that there are a number in this State who are doing so.

I was requested by a vote of the meeting to call this matter to the attention of the editors of all the leading pharmaceutical journals in the country, to the end that they make as strong an announcement of the liability of the druggists to this tax as they could see fit to do. A strong editorial on this subject in your paper would probably save a great many foolish druggists from incurring a heavy penalty, in addition to considerable notoriety.

Assuring you that whatever you can do in this matter will be appreciated by the Pennsylvania Pharmaceutical Association, I am,

Very truly yours,

EDGAR F. HEFFNER,
Secretary.

July 3, 1909.

P. S. The Internal Revenue year begins July 1, and the license can be taken out any time during the month without incurring the extra penalty.

BOOK REVIEWS.

PRINCIPLES OF PHARMACY. By Henry V. Arny, Dean and Professor of Pharmacy in the Cleveland School of Pharmacy, Department of Pharmacy, Western Reserve University, Cleveland, Ohio. With 246 original illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, $5.00.

There are one or two good books on pharmacy written by American authors, but another one would be acceptable. The trouble with most writers on pharmacy is that they do not work hard enough at pharmacy, *i.e.*, the pharmaceutical part of the Pharmacopœia. One wonders at this when one sees the mass of material at their command and realizes the amount of needful work that could be done.

Professor Arny says of his book that "the frank intention of this book is to explain the Pharmacopœia from its pharmaceutical standpoint, and if that standard says that a certain chemical is a dextrogyrate ketone, or that a certain drug is a 'sclerotium,' the writer believes that the average student should be able to learn what such terms mean without having to search through a dozen books."

Now this is exactly what a work on pharmacy is hardly likely to accomplish, and the best illustration of this is seen in Professor Arny's own book. We fail to see how a student can form an intelligent conception of the definition of camphor from the work in hand. Again the half page, which is devoted to giving the student an idea of the definition of ergot, had better be eliminated, as some of the statements are erroneous, and the student had better consult a good modern botany where fewer words and a few figures would illustrate this subject.

The sooner authors of text-books on pharmacy abandon the idea that these works should be commentaries on the Pharmacopœia, and that a text-book on pharmacy should be a treatise on botany and chemistry as well as pharmacy, the better it will be both for teacher and student. The student needs and should have that systematic training in chemistry which will enable him to understand what is meant by the term, *ketone*, and that training in botany which will enable him to understand what part of the plant and what group of p'ants is meant by the term, *sclerotium*. He is a poor student indeed if he does not learn enough about both botany and chemistry to be

able to look up these terms in the respective text-books on these subjects.

In Professor Arny's book we find in Part I the consideration of pharmaceutic operations, including pharmacopœias, metrology, specific gravity, heat, applications of heat, comminution, solution, lotion, decantation, collation, filtration, clarification, decolorization, separation of immiscible liquids, precipitation, crystallization, granulation, exsiccation, dialysis, and extraction. Part II is devoted to the consideration of galenic pharmaceutic preparations. Part III treats of inorganic chemistry. In Part IV the subject of organic chemistry is considered. Part V is devoted to pharmaceutic testing. In Part VI the nature of the prescription and the compounding of prescriptions are fully considered. In Part VII are laboratory exercises in galenic and chemical preparations.

The book contains a number of good features, as the discussion of the arithmetic of pharmacy and the exercises in chemical arithmetic. Some of the chemical explanations are also quite well stated. With a change in the point of view of the author as to the nature and extent of the subject of pharmacy, or his approach to it more as a specialist, the reviewer believes that Professor Arny has an excellent opportunity of freeing the second edition from certain misstatements which serve to mar his otherwise praiseworthy undertaking. He, as well as some other teachers of pharmacy, apparently labors under the impression that the Pharmacopœia is a treatise on pharmacy and that *vice versa* a text-book on pharmacy is a treatise on the Pharmacopœia. A little reflection will show that it is extremely hazardous for any one man to attempt to write authoritatively on the three or four or more branches or departments which are included in the Pharmacopœia, and with the rapid advances in the sciences, and the tendency to specialization and division in work, this point of view is coming to be recognized more and more.

New and Non-Official Remedies. The new edition of this book, containing an enumeration of the medicinal substances that have been examined by the Council on Pharmacy and Chemistry, prior to January 1, 1909, and which appear to comply with the rules of the Council, has been published and is available, for a nominal sum, from the *Journal of the American Medical Association*, 103 Dearborn Avenue, Chicago.

Pharmacists should be interested in making this annual publication as complete and as reliable as possible, and could and should assist the Council on Pharmacy and Chemistry materially in preventing the misuse of confidence. The book contains the rules of the Council, and descriptions of upwards of 300 proprietary preparations which appear to comply with the rules now in force. An independent application of these several rules, by individual pharmacists, and the prompt report of any evident objections, would be appreciated by members of the Council and would certainly tend to guarantee a more wide-spread adherence to, and a more strict compliance with, the rules themselves. M. I. WILBERT.

THE DESK BOOK OF FACTS FOR PHYSICIANS AND PHARMACISTS. By Ralph Walsh, M.D., Washington, D. C.

This book contains a list of new remedies giving the action, solubility, and dosage of each; a list of important official remedies; and lists of poisons and antidotes and incompatibilities. It also contains information on drugs that interfere with the action of other drugs; nutritives; precautions to be observed in infectious and contagious diseases; popular names and synonyms of numerous drugs; a list of veterinary remedies; solubility of drugs; some tests in urinalysis; practical test for estimating renal insufficiency; some rules to be observed in the artificial feeding of infants; table of Latin terms and abbreviations used in prescribing, etc.

EBERT MEMORIAL.

On May 21, 1909, there was held in the city of Chicago, ceremonies in honor of the memory of Albert E. Ebert who died November 20, 1906 (class of 1864, P. C. P.).

A monument consisting of a boulder, with a bronze memorial tablet, was placed upon the grave at Graceland Cemetery. Addresses were delivered by Prof. Joseph P. Remington, representing Ebert's Alma Mater, the Philadelphia College of Pharmacy; by Prof. Henry M. Whelpley, representing the Trustees of the United States Pharmacopœial Convention; by President J. E. Huber of the Illinois Pharmaceutical Association; by Prof. C. S. N. Hallberg of the Chicago College of Pharmacy; by Mr. Wilhelm Bodemann of the

Chicago Veteran Druggists' Association; and by Dr. Edward Kremers, representing the pharmacists of America.

The monument was presented to the Ebert estate by Oliver F. Fuller, President of the Chicago Veteran Druggists' Association, and was accepted by Mr. T. S. Jamieson, one of the executors, on behalf of the estate and presented by him to the American Pharmaceutical Association, President Oscar Oldberg accepting it.

The occasion was one of national importance; the trustees and the other visitors were entertained by the C. V. D. A. at a noon luncheon and, in the evening, the Chicago Branch of the A. Ph. A. entertained the guests, Professor Remington acting as toastmaster.

A replica of the bronze tablet was sent to the Dean of the Philadelphia College of Pharmacy, who presented it to the College and it will be mounted and hung on the walls. It will be remembered that Albert E. Ebert left his entire estate to the American Pharmaceutical Association.

PHILADELPHIA COLLEGE OF PHARMACY.

The quarterly meeting of the members of the College was held June 28, 1909, at 4 o'clock P.M. in the library. In the unavoidable absence of the President, the First Vice-President, Mahlon N. Kline, presided.

The minutes of the annual meeting held March 29 were read and approved.

The minutes of the Board of Trustees for the meetings in March, April, and May were read by the Registrar and approved.

The Committee on By-Laws reported adversely on the proposed amendment to the by-laws to abolish the fee for the certificate of membership. The meeting sustained the recommendation of the committee.

The Committee on Membership reported the names of several members who were in arrears for annual dues, and it was, on motion, ordered that their names be dropped.

The Historical Committee, through Chairman George M. Beringer, reported that during the year a condensed historical sketch of the College was prepared for publication in the memorial volume of the scientific institutions, medical colleges, and hospitals

of Philadelphia, to be published as a part of Founders' Week Celebration of the city, held in October, 1908. The committee made the suggestion that in order to fittingly celebrate the centenary of the College a complete history of the College since its foundation should be published. In connection with such a volume the notable events in the careers of the officers, teachers, and graduates should be included, as the personal element of such a historical sketch would add very materially to its value and general interest. As the preparation of such a historical volume would require a great deal of time, the committee placed the proposition before the College at this time so that it might receive careful consideration. The committee also suggested that additional cases be provided to care for the numerous additions to the historical collection.

The recommendation of the committee in reference to publishing a history of the College was well received, when, on motion of Professor Remington, the President was requested to appoint a committee of five to prepare a plan and scope of the work, to report at a later meeting.

An autograph letter of Sir Morrell Mackenzie was presented by Mr. Joseph Jacobs, for which the thanks of the College were voted to him.

The Committee on Necrology, Professor Sadtler, Chairman, reported the deaths of two members during the year, viz., William J. Miller and Jacob H. Redsecker.

The Committee on By-Laws proposed several amendments to the by-laws relating to membership, the most important one being to strike out the paying an initiation fee, action on which is to be deferred till the next meeting of the College.

The delegates to the thirty-ninth annual meeting of the New Jersey Pharmaceutical Association, held at Lake Hopatcong June 9–11, reported that the meeting was fairly well attended and a great deal of interest and enthusiasm was manifested at the various sessions. Professor Henry Kraemer conveyed the greetings from the Philadelphia College of Pharmacy, and Professor C. B. Lowe gave a lecture on "Emergencies." The Committee on Papers and Queries presented a number of papers, and the Committee on U. S. Pharmacopœia had endeavored to obtain critical reviews of a number of official preparations, and as a result papers were presented upon plasters, cerates, ointments, troches, and syrups.

The social features were very much enjoyed and consisted of

trolley and boat rides and a vaudeville show. One of the notable events was the formation of a Ladies' Auxiliary.

The effort to increase the membership from New Jersey in the American Pharmaceutical Association was heartily endorsed.

Among those elected to honorary membership was Professor C. B. Lowe.

After considerable discussion the association endorsed the proposition to have incorporated in the State Pharmacy Law a prerequisite clause, and the Committee on Legislation were directed to prepare a draft of such a bill to be submitted to the next session of the Legislature. Such an enactment will place New Jersey in harmony with New York and Pennsylvania in pharmaceutical requirements.

Delegates to the Pennsylvania Pharmaceutical Association reported as follows through the Chairman, Professor C. B. Lowe:

"The thirty-second annual meeting of the Pennsylvania Pharmaceutical Association was held at Bedford Springs, June 24–27. An important report which provoked considerable discussion was that of the Committee on Legislation, John C. Wallace, Chairman. The passage of the Pure Drug Bill for Pennsylvania differs from the national Pure Food and Drugs Law in that it does not allow any variation from U.S.P. standards, in the case of six drugs and preparations containing them, as specified in the law (see AMERICAN JOURNAL OF PHARMACY, January, 1909). While the law was not entirely satisfactory to all of the pharmacists of the State, many of whom did not think it wise to allow any variation at all, it was thought to be the best which could be enacted at the present time. The new cocaine law was also referred to; this in addition to the restrictions contained in the old law compels both manufacturers and wholesalers to keep a record of all sales of cocaine or preparations containing it. The number of papers presented was forty-five. The next meeting is to be held at Buena Vista Springs."

The following members were elected delegates and alternates to the Convention to Revise the United States Pharmacopœia to be held in Washington, D. C., in May, 1910. Delegates: Professor Joseph P. Remington, Professor Samuel P. Sadtler, Professor Henry Kraemer. Alternates: Professor F. X. Moerk, Professor Charles H. LaWall.

The following appointments were made:

Delegates to the meeting of the American Pharmaceutical Association to be held at Los Angeles, California, August 16: Professor

Joseph P. Remington, Joseph W. England, Freeman P. Stroup, William McIntyre, and William L. Cliffe.

Committee on Nominations: Jacob M. Baer, Walter A. Rumsey, William McIntyre, Otto W. Osterlund, William E. Lee.

Historical Committee: George M. Beringer, Jacob M. Baer, Henry Kraemer, Warren H. Poley, C. A. Weidemann.

Committee on Necrology: Samuel P. Sadtler, Henry Kraemer, Gustavus Pile.

Professor Henry Kraemer proposed a number of names for honorary membership, which according to the rules lie over for action at the next meeting.

Professor Joseph P. Remington presented on behalf of Mr. N. H. Martin, of Newcastle-on-Tyne, England, an honorary member of the Alumni Association of the College, a beautiful silver loving cup, with this inscription on it: "Presented to the Philadelphia College of Pharmacy in loving remembrance of American and English leaders in pharmacy by N. H. Martin, Hon. Mem., May, 1909. Brady, Deane, Reynolds—Procter, Parrish, Maisch, Ebert." The cup was awarded to the last graduating class (1909), and in turn to any class which excels the scholarship average of an immediately preceding class. The Secretary was directed to convey to Mr. Martin the thanks of the College for this valuable gift.

Professor Henry Kraemer, on behalf of Joseph A. Heintzelman, presented a number of books he had used in his student days, also the program of his graduating class (1859). He also presented on behalf of Joseph Jacobs, two volumes of the AMERICAN JOURNAL OF PHARMACY (1830–1831), and a number of pamphlets on botany and allied subjects. The thanks of the College were voted to these gentlemen for their donations.

The Committee on Library were authorized to grant the use of any duplicate sets of books not otherwise used to any of the various departments of the College.

An application for life membership was received from one of the recent graduates.

A member called attention to the fact that the College had no printed form to use in filling out credentials, when, on motion, the Secretary was directed to procure a form for credentials.

C. A. WEIDEMANN, M.D.,
Recording Secretary.

ABSTRACTS FROM THE MINUTES OF THE BOARD OF TRUSTEES.

March 2. Thirteen members were present. The Committee on Property reported the completion of the bronze sign on the front of the College Building, and that plans for a hot-house, to be built on the roof of the Annex Laboratory building, were progressing.

The Committee on Supplies reported that the expense for equipping the Pure Food and Drugs Laboratory amounted to four thousand eight hundred dollars ($4800.00).

The Committee on By-Laws reported adversely to changing the time for ending the fiscal year of the College. The recommendation of the committee was sustained.

April 6. Twelve members were present. Mr. Mahlon N. Kline was elected Chairman, Mr. George M. Beringer, Vice-Chairman, and Mr. Jacob S. Beetem, Registrar. The Chairman announced the various standing committees for the year.

The Committee on Scholarships reported the award of the Edward T. Dobbins Scholarship for the first time.

The Committee on Appropriations reported the estimated amounts for the ensuing year that would be needed by the various committees and departments authorized to make expenditures.

The Committee on Announcement reported that copy for Bulletin No. 4 was being prepared and that the pocket edition relating to the Course in Pharmacy would be merged in this number.

The Special Finance Committee reported that some additional contributions had been received for the Pure Food and Drugs Laboratory. The special committee, consisting of Messrs. Remington, Sadtler, and Poley, were reappointed.

Mr. Christopher Koch requested that permission be granted the Pennsylvania State Board of Pharmacy to hold their examinations at the College. In granting the request, Mr. Beetem, Secretary to the Board of Trustees, was instructed to convey to Mr. Koch the appreciation of the Board that another one of the graduates of the College had been honored by an appointment to the State Board of Pharmacy.

May 4. Fourteen members were present. The Committee on Instruction reported having received from the Faculty reports of the details of the work in the various departments, with suggestions for the future. The several recommendations of the committee were approved; these included the recommendation of lengthening the

courses for each year, whereby a material increase in the three-year course is secured.

The Committee on Examinations reported that all the examinations had been held and full details would be given at the adjourned meeting.

The Committee on Theses reported examining the theses and entering a record of them and read suggestive rules regarding the writing of theses.

The annual report of the Treasurer was presented.

May 11. Adjourned meeting; ten members were present. The Committee on Examinations read a list of names of students recommended by the committee to receive the degrees of Doctor in Pharmacy, and Pharmaceutical Chemist, and the Certificates of Proficiency in Chemistry, and Proficiency in Pure Food and Drugs Course. The Registrar was directed to cast a ballot for those recommended, whereupon they were declared entitled to receive the degrees and certificates. The committee further announced the names of those students entitled to prizes, and the names of those entitled to honorable mention. The Chairman then announced the names of those who would present the prizes at the coming commencement.

C. A. WEIDEMANN, M.D.
Recording Secretary.

NOTES AND NEWS.

THE PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION FOR 1908 appeared in the early part of 1909, and constitute a volume which reflects credit upon American pharmacy. The editing by the General Secretary, Professor Caspari, has been well done. Considering the size of the book and the responsibility involved in its publication, it has appeared with a promptness that should be gratifying to the members of the association.

UNIVERSITY OF MARYLAND.—The exercises of the centennial celebration of the foundation of the University of Maryland, held from May 30 to June 2, 1907, have been published in the form of a memorial volume of 267 pages, which is illustrated with a number of portraits and other half-tone reproductions, and contains much interesting historical matter. The Maryland College of Pharmacy is now a department of the University.

DIGEST OF COMMENTS ON THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA.—This is a continuation of the "Digests of Criticisms" instituted by the late Dr. Charles Rice, the last of which appeared in 1901. The present pamphlet deals only with the literature of the latter half of 1905, representing the period from the publication of the U.S.P. viii to December 31, 1905. It is stated in the preface that because of the wide-spread and growing interest in the U.S.P. viii, and because of the official connection of the Public Health and Marine Hospital Service with the United States Pharmacopœial Convention, the Board of Trustees of the latter organization requested the co-operation of the Surgeon-General of the Public Health and Marine Hospital Service of the United States in the compilation and publication of a "Digest of Comments" bearing on the articles official in the U.S.P. viii. This "Digest of Comments" was compiled by Murray Galt Motter and Martin I. Wilbert, and is issued as Bulletin No. 49 of the Hygienic Laboratory. The Digest comprises 292 pages, and affords an excellent summary of the literature pertaining to pharmacy for the period mentioned.

It will be seen that there is a break of four years between the time of the publication of the last "Digest of Criticisms" and the present Bulletin, but as the literature of this period is pretty well covered by the Report on the Progress in Pharmacy of the American Pharmaceutical Association, it is available for reference so far as it goes. This circumstance suggests not only the co-operation of the Hygienic Laboratory and U. S. Pharmacopœial Convention, but also the further co-operation of the American Pharmaceutical Association with these two organizations.

DR. E. R. LARNED, of the department of experimental medicine, Parke, Davis & Co., Detroit, Mich., gave an interesting and instructive illustrated lecture at the Philadelphia College of Pharmacy, Thursday evening, April 8, on the subject of "Methods of Preparation and Standardization of Extracts and Biological Products."

THE PRESIDENT'S CUP presented by Howard B. French, Ph.G., in trust to the graduating class of the Philadelphia College of Pharmacy attaining the highest average in scholarship, was awarded, for the first time in five years, to the class of 1909.

INTERNATIONAL CONGRESS OF PHARMACY.—The next meeting will be held in Brussels, September 1–5, 1910, under the patronage

of His Majesty Leopold II, King of Belgium. Those desiring to present papers or to be otherwise identified with the work of the congress, should address the Secrétaire Général, Dr. A. Schamelhout, rue Malibran, 12, Brussels, Belgium; being particular to specify their profession, titles, and address.

THE MEDICO-PHARMACEUTICAL SECTION OF THE CLEVELAND ACADEMY OF MEDICINE was organized on Friday evening, June 25, in the auditorium of the Cleveland Medical Library. President Lower and Secretary Ford of the Academy acted in their respective capacities, and the following officers for the current year were elected and installed: Chairman, Lewis C. Hopp; Vice-Chairman, M. G. Tielke; Secretary, Dr. J. B. McGee; Councillor for the Section, Dr. L. J. Tuckerman. The claim was made at the meeting that "this was the first time that a local medical society has formed a section in which doctors and druggists met on an equal basis, representatives of each calling having equal voice in the selection of officers of the section." It is intended to have at each meeting a paper on some class of U.S.P. and N.F. preparations, followed by a free discussion of the paper by both physicians and druggists. It is also intended to have at each meeting a discussion on incompatible prescriptions. A committee was appointed to arrange for a permanent exhibit of U.S.P. and N.F. preparations in the auditorium of the Cleveland Medical Library.

THE AMERICAN PHARMACEUTICAL ASSOCIATION CONVENTION will be held at Los Angeles, Cal., August 16–23 inclusive, the Hotel Alexandria having been selected as headquarters. All communications should be addressed to Thomas W. Jones, Local Secretary, 1726 West Twenty-second Street, Los Angeles, Cal.

THE MIDLAND DRUGGIST AND PHARMACEUTICAL REVIEW is the title of the new publication formed by the merging of two well-known contemporary pharmaceutical periodicals. Professor James H. Beal, formerly editor of the *Midland Druggist,* is managing editor of the new journal, and Professor Edward Kremers, formerly editor of the *Pharmaceutical Review,* is scientific editor. The publication office is at Columbus, Ohio.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.—This is a new journal, the initial number of which made its appearance in May. It is edited by Dr. John J. Abel, professor

of pharmacology, Johns Hopkins University, with the assistance of fourteen associate editors, among whom are the most prominent pharmacologists of this country. At least six numbers of the Journal will be issued yearly, and will constitute a volume of about 650 pages. The Williams & Wilkins Publishing Company, 2427–2429 York Road, Baltimore, are the publishers, and the subscription price postpaid is $5.00 per annum.

PHILADELPHIA BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.—The sixth and last of the season's series of free lectures and demonstrations in the post-graduate course of instruction for local pharmacists was given at the Philadelphia College of Pharmacy, 145 North Tenth Street, on Tuesday evening, April 20, 1909, at 8 o'clock.

Professor H. H. Rusby, of Columbia University, spoke on "The Necessity of Botanical Identification as a Basis for Other Pharmacological Work," and Professor Henry Kraemer discussed the subject of "Botany as a Hobby and Useful Science for Pharmacists," illustrating his remarks with specimens of growing medicinal plants and lantern slides.

DR. GEORGE T. MOORE, formerly connected with the Bureau of Plant Industry, U. S. Department of Agriculture, and for several years past identified with the botanical work of the Marine Biological Laboratory, at Woods Hole, Mass., is now a member of the teaching corps of the Shaw School of Botany Washington University, St. Louis, Mo. The School of Botany enjoys full use of the facilities of the famous Shaw Botanical Garden, which include, in addition to experimental grounds, plant houses and laboratories, a collection of over 11,000 distinct species or varieties of living plants, an herbarium of over 600,000 specimens and a botanical library of nearly 60,000 books and pamphlets. Dr. William Trelease is at the head of the Shaw School of Botany, which offers two research fellowships, of $500 each, for the next academic year.

POISONS IN MUSHROOMS.—Ford gives (*Science,* July 23, 1909) a résumé of the later chemical work on the poisonous constituents of mushrooms, beginning with that of Kobert, together with descriptions of their effects upon man and other animals. In all about 20 forms have been examined. Kobert isolated an hemolysin, or principle which dissolves the red blood-corpuscles, from *Amanita phalloides,* which he took to be a toxalbumin and to which he gave the name *phallin;* and later reported the existence of an alcohol-

soluble poison which he considered to be an alkaloid. Ford and his co-workers (Drs. Abel and Schlesinger) for the most part confirm the observations of Kobert, but with some sharper distinctions as to the true nature of the toxic principles. They have shown "that aqueous extracts of *Amanita phalloides* contain two poisons which may be separated by concentration to a small bulk and precipitation by ethyl alcohol." The precipitate contains the hemolysin (phallin of Kobert), or *amanita-hemolysin* as Ford designates it. The filtrate contains a toxin which Ford classifies as *amanita-toxin.* The hemolysin is destroyed by heating to 70° C., and by the digestive ferments, and has been shown to be a "very sensitive glucoside, containing in its molecule fixed amounts of carbon, nitrogen, hydrogen, and sulphur." The amanita-toxin in its pure state has proven to be one of the most powerful poisons known, "four-tenths of 1 milligramme killing a guinea-pig within 24 hours." Other poisons are found in other fungi, as muscarine in *A. muscaria,* which appear to differ in their chemical constitution.

The American Institute of Chemical Engineers held its first semi-annual meeting, June 24–26, 1909, at the Polytechnic Institute, Brooklyn, N. Y., with Prof. Samuel P. Sadtler as presiding officer.

American Conference of Pharmaceutical Faculties.—The proceedings of the 9th annual meeting held at Hot Springs, Ark., September 7–12, 1908, have just been issued. In all, thirty-three institutions now hold membership in the conference. The address of the President, J. T. McGill, while entitled "The Increasing Responsibilities of the Pharmacist," deals largely with the question of preliminary education.

The Wellcome Research Laboratories, Khartoum.—The third Report of these Laboratories has been issued, and includes the results of fresh researches on a large number of scientific subjects, presenting valuable knowledge on certain branches of tropical medicine, entomology, chemistry, etc. Of special interest to pharmacists are the reports of the chemical section on the occurrence and collection of Sudan gums, the investigations into the bacterial origin of gums, and those on the composition of the fats and oils of Sudan fruits. The report contains 477 pages of text and 361 illustrations, many of which are colored, and may be had by addressing the Toga Publishing Co., 45 Lafayette St., New York. Owing to the cost of production, a charge of $5.00 has been fixed for it.